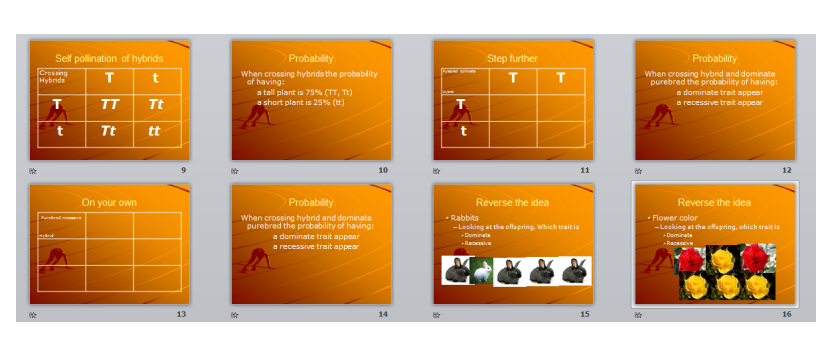
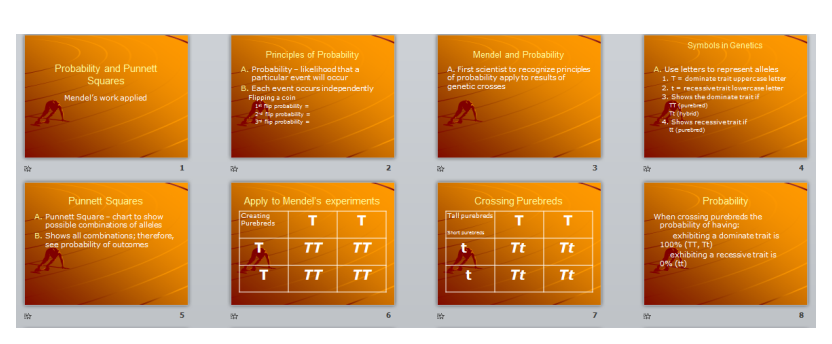
**Mendel and his experiment applied to Punnett Squares**

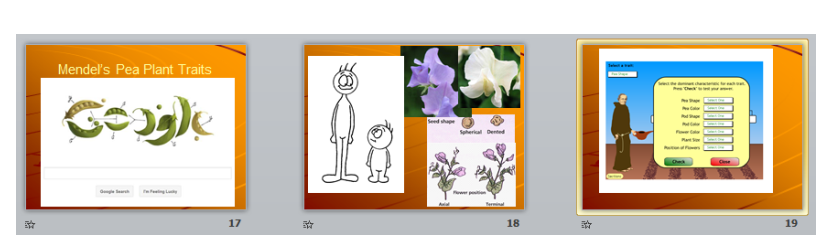
**Prior Requirements**- Students must have access to the internet in their home or use the computer lab after school. The students must be able to type a specified address into the web browser and have a Google account for using Google Docs.  
  
**Learning Objectives**-   
The student will be able to describe Mendel’s pea experiment  
The student will be able to use a Punnett Square to predict the likelihood of a certain trait being passed on to its offspring.   
The student will be able to observe offspring and predict which trait is dominate and which are recessive   
  
**Assessment of Student Learning-** All objectives will be assessed through the final project. After successfully finishing the virtual experiment, the student will take a screen capture of their predictions of which traits are dominate or recessive. This screen capture will be pasted to a student generated Google Document that will also have a three paragraph essay explaining Mendel’s Pea Plant Experiment.  
  
**Rationale**- This activity is the foundation for the beginning of genetics and how traits are passed from a parent to its offspring. This lab is interactive and helps the students do critical thinking of the possible outcomes. They infer from the outcome which trait is recessive and which is dominate.  
  
**Materials and Equipment** -   
Access to computer lab or laptop cart, one for each student or one for every two students. These computers must have Adobe Shockwave loaded on them.   
Access to projector for PowerPoint part of the lesson see step C - E.  
Google Doc for notes on videos.  
Specified web addresses:  
**Pre class material for Google docs notes:**  
[**http://www.youtube.com/watch?v=CX98DII6Z1E&feature=related**](http://www.youtube.com/watch?v=CX98DII6Z1E&feature=related)  
[**http://www.youtube.com/watch?v=d4izVAkhMPQ&feature=related**](http://www.youtube.com/watch?v=d4izVAkhMPQ&feature=related)  
**Class work:**  
<http://www2.edc.org/weblabs/Mendel/mendelInstructions.html>  
<http://www2.edc.org/weblabs/Mendel/mendel.html>

**Procedure**-   
Night before Homework the night before: Assign students to watch these videos and fill out the notes on Google Docs for the video.  
Day 1 Next day, in computer lab or using laptops, students access their Google Docs notes to share with teacher, if they haven’t already. They may refer to as the class continues.  
Have students close laptops or turn off screens. On the front board, using PowerPoint, do the Punnett square activity with dominate and recessive traits talk about probability of outcomes.   
Continues with the PowerPoint and reverses the process, give offspring outcomes and have them infer which trait is dominate or recessive.  
Introduce the traits that Mendel focused on, not sharing which were dominate or recessive.  
Day2 Introduce the virtual lab and show screen capture that students will need to do for credit for being successful in completing the lab. Example is on the last slide of the PowerPoint.  
Have students open the instructions to refer to as going through the lab: <http://www2.edc.org/weblabs/Mendel/mendelInstructions.html>  
Have students open a second window to being the virtual lab:   
<http://www2.edc.org/weblabs/Mendel/mendel.html> Teacher needs to be available to give students feedback on their progress or to clarify.  
On a new Google Doc paste the required screen capture and write a three paragraph summary of Mendel’s work. Name this document your name Mendel’s Work Summary, for example mine would look like Droxsan Williams Mendel’s Work Summary  
If time allows, use Notebook software activity to review the vocabulary words from the videos.  
  
Materials Referenced in Lesson

Video Assignment:

Change the document name to your name Mendel and Punnett Squares (for example mine would look like Droxsan Williams Mendel and Punnett Squares)   
  
Watch this video and fill in the information below:   
<http://www.youtube.com/watch?v=CX98DII6Z1E&feature=related>  
Who is the scientist?  
  
What is his nickname?  
  
  
Watch this video. Use complete sentences and scientific language for the information below.  
<http://www.youtube.com/watch?v=d4izVAkhMPQ&feature=related>  
  
Two trait rules of heredity are:   
1.   
2.  
  
A Punnett Square is used for   
  
Define these words in a complete sentence and with scientific terms.  
trait -   
dominate -   
recessive -   
purebred -   
hybrid -

PowerPoint



Vocabulary matching activity: